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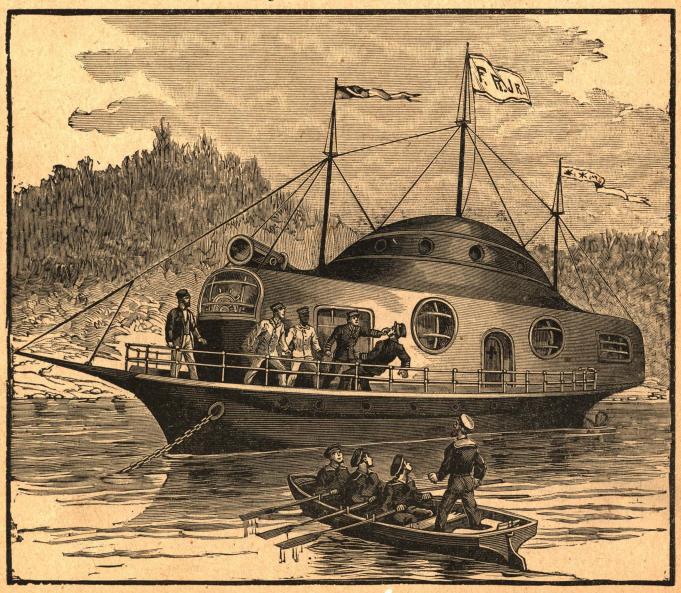
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100 Miles Below the Surface of the Sea;

or, The Marvelous Trip of Frank Reade Jr.'s "Hardshell" Submarine Boat.

By "NONAME."



He placed a rough hand on Frank's shoulder. The next moment he was in a position to regret his rashness.

A swift driving Yankee fist took him full between the eyes. Another lightning-like blow caught him back of the ear and he went down like a felled ox. This was not all.

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100 MILES BELOW THE SURFACE OF THE SEA;

The Marvelous Trip of Frank Reade Jr.'s "Hardshell" Submarine Boat.

By "NONAME,"

Author of "Under the Equator From Ecuador to Borneo," "Frank Reade, Jr.'s 'Sky Scraper,'" "Under the Yellow Sea," "Frank Reade, Jr.'s Prairie Whirlwind; or, The Mystery of the Hidden Canyon," etc., etc.

CHAPTER I.

A SCIENTIFIC PROBLEM.

"WHY, I tell you the thing is impossible. Nothing could stand the

terrible pressure at that fearful depth."

The speaker was Prof. Van Dent of the American Academy of Science. At the moment he was seated at a large table in the draughting-room of Frank Reade, Jr.'s machine works in Readestown.

The distinguished young inventor was seated opposite him. Between them were large and explicit charts of the Pacific Ocean.

The two celebrated men, one foremost in science, the other the most famous of inventors, were holding quite a heated argument.

"Then you don't really think the plan feasible?" said Frank.

" No!

"No!"

"But how do you know that it is not?"

"Easy enough. Has it not been proved beyond all doubt that below a certain depth, the pressure of the water would crush your submarine boat or any such invention, like an eggshell?"

Frank Reade, Jr., coolly lit a cigar.

He leaned over the table, and said impressively:

"How has it been proved?"

"How?" spluttered the learned professor. "Why, confound it, man, you don't pretend to doubt it?"

"I doubt everything which is mere calculation or guess work."

"And do you call it guess work—— Why, figure out the pressure to the square inch, and——"

"And do you call it guess work—— Why, ngure out the pressure to the square inch, and——"
"Hold on!" said Frank, coolly; "that would be a waste of time. We won't figure it out because it would leave us no better off than we are now. My claim is that I can invent a submarine boat which can resist the pressure and travel at the lowest depths of the sea with perfect safety."

The professor looked aghast.

This was in exact contradiction to the claims of all scientists. It

was disposing of what has for years been an accepted truth.

"Do you know that there are depths in the ocean which never have been sounded?" he finally asked.

"I do," replied Frank; "there are depths which the plummet has never reached for lack of weight and of line. I believe that in places the North Pecific is fully one hundred miles deen!" the North Pacific is fully one hundred miles deep!"
"One hundred miles!"

The professor arose and took a turn around his chair.

"And do you fancy that you can invent any sort of a boat which will enable you to go with safety one hundred miles below the surface of the sea?"

Frank nodded his head.
"I do." he replied; "and now let me ask you how you obtained your positive knowledge of the comparative pressure of the water in ocean depths?"

"Certainly; by the most simple of calculation."

"Which is mathematical computation?"

"Yes."

"And which simply is mere guess-work. Oh, I know you learned savants; you can tell us the distance in round miles to the planets, but it is only a guess; you have never been there. You have never visited the depths of the sea; hence how do you know that a tough steel wall will not resist safely all pressure there may be?"

"You are a hopeless case," declared Van Dent. "I don't know how I am going to convince you. One thing I wish to ask."

"Do you meditate taking any such foolbardy trip?" Yes."

The professor twitched at his beard savagely and took a turn up

The professor twitched at his beard savagely and took a turn up and down the apartment.

"One thing is sure," he declared, forcibly. "It will be a foolhardy thing. You need not ask me to go with you, for I will not."

Frank laughed heartily."

"I will make a wager with you," he declared, "that you will beg of me the privilege before the day comes for the start."

"Don't talk nonsense!"

"Wall black you want to well. You would not miss this subvacion to in

"Well, I know you too well. You would not miss this submarine trip for any amount of money. Am I not right?"
"No!" retorted the learned savant, as he slammed the door behind him in going out.

Frank touched a bell.

Instantly a comical-looking darky leaped into the room.

He had a wealth of kinky wool, dancing eyes, and white ivories, which gleamed beneath his thick lips.

" Pomp!"

"Yes, sah!"

The darky ducked his head. "Where is Barney?"

"I done fink he am in de yard, sah. If yo' punch dat bell twice he come quick enuff, sah."

Frank struck the bell twice.

The next moment a genuine type of Irishman bounded into the room. He had the typical broad mug, glowing red hair and twinkling blue eyes.
"Barney, you rascal."
"Yis, sor!"

"I want you and Pomp to listen to what I have to say!"
"All right, sor!"
"Yes, sah!"

"Is the submarine boat afloat in the basin yet?"
"Yis, sor!" replied Barney. "Shure we slid her into the wather fer

the first toime to-day, an' sure she floats loike a cork."
"Good! Well, Professor Van Dent has just been here, and he de clares that we cannot live to get to the bottom of the North Pacific. His theory is that the boat will be crushed by the pressure of the

"Golly!" ejaculated Pomp. "I done fink it take a pooty big pressure fo' to mash dat boat. It hab a berry hard shell, sah!"

"That is my argument," said Frank, "but I can't make him believe'it. However, the Hardshell is going to the bottom of the Pacific just the same."

"Begorra, that's right, sor!"
"Will Marse Van Dent go along wif us, sah?" asked Pomp.
"I feel quite sure that he will," declared Frank, "but I wish to say this: if either of you have any fears or are afraid to take the risk you are hereby released from the obligation to accompany me."

The two services looked estenished.

The two servitors looked astonished.

"Yo' ain't goin' to leave us to home, sah?" asked Pomp.

"Not if you really wish to go!"

"Yo' kin bet yo' boots on dat, sah!"

"Begorra, Misther Frank, we've been iverywhere wid yez on all yer thrips an' it's a poor toime to back out now, sor!"

"Good for you!" cried Frank in tones of pleasure, "then you are

to have everything all in readiness to start within two days.

" A'right, sah!"

Accidentally, incidentally, or otherwise, just how it matters not, Pomp trod on Barney's toe.

The two servitors were addicted to the cheerful practice of roasting,

each the other, at every practicable opportunity.

"Git off me fut, yez black ape!" cried Barney, giving Pomp a prodigious thump on the cranium, which might have been the kick of a fly for all he felt it.
"Hi dar, don' yo' hit dis chile!" roared Pomp.

"Yez insulted me!" "Yo' look out!"

Before Frank could arrest the ruction, Pomp lowered his head and took Barney on the fly, full in the stomach.

The Celt thought he was struck by a thunderbolt, and never stop-

ped turning somersaults until he was in the middle of the yard.
"Confound those jokers!" exclaimed Frank, angrily, "they'll kill each other yet."

"So you have really decided to take the fool-hardy trip?"
Frank turned in astonishment as the voice sounded at his elbow. It was Prof. Van Dent.
"Jupiter!" he exclaimed, "have you returned?"

"I have, to try and dissuade you from your purpose!" said the scientist, grimly.
Frank laughed.
"Better devote your time to a better purpose!" he said.

"At least I have some curiosity to see this wonderful machine.
Will you show it to me?"

"I will with pleasure, and convert you at the same time!"
"That you cannot do!"

"We will see!"

Frank led the way out into the yard. The scientist followed him. Passing through an'inner gate they came to a huge tank, or basin of water, covering fully an acre.

In this rested the submarine boat.

The first impression gained by Van Dent upon gazing at it was that it could certainly fulfill all that Frank had claimed for it.

Certainly it was in design and symmetry as well as in detail of construction and material a wonderful craft.

There it rested upon the waters of the little basin as natty and light as a cork.

Its hull was built something upon the lines of a schooner, yet not

of great depth of hold. Solid steel was its entire construction, and every bolt and rivet and

plate was of the best material.
"Well," exclaimed Frank, after a pause of some moments. "What is the matter with you, Van Dent? Are you struck dumb?"
"By no means," replied the professor, quickly, "but upon my word Frank, the more I see of your new boat the more feasible your plan looks."

Frank laughed heartily.
"Of course," he cried. "I knew you would be a convert. But come, you must take a closer look at the Hardshell; could there be a better name for her?"
"Certainly not," replied Van Dent, as he followed Frank along the

edge of the basin.

CHAPTER II.

THE PROFESSOR IS CONVINCED.

THE Hardshell lay near the edge of a small landing which extended into the basin.

Barney and Pomp were working aboard her and had thrown a plank from the wharf to her deck.

Across this Frank and the professor now made their way.

The exterior of the submarine boat presented the appearance of a dome-like shell resting upon the main hull of the craft.

This shell was pierced by two square windows and two circular windows, deep-set, and with the thickest courses of plate glass.

The upper part of the dome was pierced with circular, or dead-eye windows, at intervals all the way around. The pilot house was for-

ward, and over it was a powerful search-light.

A guard rail ran fore and aft, and the entrance to the cabin was through a deep vestibule amidships.

Passing into the cabin a wonderful scene was revealed.

Though small, this was richly furnished, and equipped as well with the necessary articles of comfort for a long voyage.

Through this cabin Frank and the professor passed. The latter was exceedingly pleased with the appointments.

"It is fit for a ladies' bower," he said. "Indeed, nothing could be

finer!"

Passing on, they entered the next cabin.
This was the saloon, or living cabin. Here were fine silver and china, and the equipments of a finely-managed cuisine.

Just off this cabin was the cooking galley where Pomp held sway.
The cooking was done by an electric process, which obviated the necessity of a fire. This was the invention of Frank Reade, Jr.

Next was the long forward cabin and staterooms. These were comfortable and cozy

"Come below to the engine-room."

Down winding stairs of brass they went into the engine-room. Here were the electric engines. Marvels of invention and most delicate in construction, though powerful in execution.

After a careful inspection of these, Prof. Van Dent said:
"But these are for the propulsive power alone. How do you cause
the boat to sink and rise?"

Frank opened a steel door which opened into a compartment amid-

This compartment was occupied by an immense tank, hermetically

sealed as he explained.

"At the lower section of this tank," said the young inventor,
"there is a long sliding portion or valve, with suction pipes leading

"By pneumatic pressure this is opened and water rushes into the

tank instantly, and the boat at once begins to sink.

"To raise the boat this water is expelled by pneumatic pressure, so powerful that the tank is exhausted in a very few seconds!"

The professor was silent a moment.
"That is all right," he said finally, "but from what source comes your supply of air?"

Frank smiled and turned to another steel door, which he threw open.

What looked something like a chemist's laboratory was revealed.

There were long coils of glass pipe, immense retorts and glass globes; great jars of chemicals sat about the place.

"Every atom of air which we use while under the surface," he said,
"is manufactured by these powerful chemical generators. It is also
of the finest and purest quality."

Van Dent took a critical look at the generators.
"Wonderful!" he declared, "but how long a time can you keep

these generators at work?"
"An unlimited period," replied Frank. "There are sufficient chemicals aboard to last for years."

"And this air is generated——"
"Is disseminated throughout the entire boat by means of pipes and valves. When it becomes vitiated the gases are attracted and consumed by a little chemical agent which is kept in small vases in different parts of the boat."

"Enough!" gried the professor. "Variation of the boat."

"Enough!" cried the professor. "You are to-day the greatest genius on earth, Frank Reade, Jr. Nobody will dispute that. When will you start upon your deep sea cruise?"

"In two days!

"Ah, that will be very soon now!"
"Yes."

"You still cling to the belief that the steel walls of this boat will

be sufficient to withstand the pressure of the deep sea?"
"Look here!" said Frank, "have you never seen a bowlder of tons weight supported by a little pebble without crushing it?"

"Well, there is the principal. The Hardshell will be like that lit-tle pebble and the weight of the sea, even at such fearful depths will not be sufficient to crush it." "But can it force its way down through such a depth? What of

"But can it force its way down through such a depth? What of its specific gravity in such a waste——"
"Pshaw!" exclaimed Frank, impatiently. "The motive power will force the submarine boat down. There is no reason, even if her own weight were not sufficient, why the propeller should not work. For that very fact I have placed two extra propellers beneath her keel, which will cut a downward path for her!"

The professor could say no more.

It seemed to him that Frank had provided for every contingency.

And he finally returned to the deck.

"Well, Van Dent," said Frank, when they were once more on land,

you will at least be on hand to see us off next Thursday?"

"Then you are really going?"

" Certainly!"

"Who will go with you?"
"Barney and Pomp and—you!"

The professor's mobile face did not change.

"I will have to go to Washington first," he said reflectively.

Frank smiled. He knew that from the first the distinguished scientist had not abandoned the idea of going on the trip.

It was natural to him to demur and argue, and this was just what

while for you. Say till Friday——"

"No," replied the scientist, energetically. "I will be on hand, you may depend."

With which he turned abruptly and strode away. An evening train

took him out of Readestown.

Barney and Pomp wasted no time in preparing the Hardshell for the cruise.

Supplies and necessary equipments were placed aboard, and when Thursday morning came, all was in readiness.

Even Barney and Pomp themselves were upon the deck dressed in their natty yachting uniforms and ready for business.

The artisans and mechanics employed by Frank Reade, Jr., in his

shops were out in force.

So, indeed, were the townspeople, who were always interested in Frank's inventions.

Frank went on board at ten o' clock; he was very much pleased to find all in readiness.

"You have done well, boys!" he said, in tones of heartiest commendation, "but where is the professor?"

" He is here."

A gruff voice sounded at Frank's elbow; he turned instantly and was face to face with Van Dent

"Good enough," he cried. "You are right on time, professor!"
"I always intend to be," replied the scientist. "In one hour we start according to your announcement." " Yes."

The professor went below to his state-room.

This was quite a spacious apartment, for he had his scientific instruments and many books to stow away.

This required some time, but sharp at eleven o'clock he was on deck

again and ready for the ceremony of starting the boat.

The tank or basin was connected by means of locks with a canal, which in turn connected with the river.

Into the first lock the boat glided.

Barney was in the pilot-house where he could not only steer the

craft, but regulate its speed as well.

All the others were on deck.

The Hardshell glided into the canal and started on its way down to the river.

As it emerged from the canal it was in full view of thousands of people who had congregated on the banks.

Cheers filled the air and cannon roared and bands of music played. Frank and the professor waved flags in response. A hail came from the shore:

"Let's see your boat sink!"

Frank turned to make a sign to Barney, who could see him through the glass windows of the pilot-house.

Then he said to Van Dent:

"Into the cabin, quick! Come, Pomp, you black rascal!"
All sprang into the cabin.

At the same moment Barney touched an electric valve. The doors and windows of the boat were instantly closed and sealed air-tight.

At the same time the oxygen generators in the hold began to work. Fresh air rushed through the boat.

The propeller had been stopped, and now a touch at a lever by Barney, caused the boat to take a gentle lurch forward.

The next moment she was under the water.

For a brief moment all was darkness, then the electric lights of the boat blazed up.

The bed of the river was seen as plain as could be for a long distance about. Those on the river bank saw a dull glare on the surface of the water, which marked the spot where she had gone down.

Barney started the propeller again, and the boat swam around in a circle under the water.

There was no doubt about it.

The submarine boat was a success. She behaved as nicely under the water as she ever did above.

The submarine voyagers, especially Prof. Van Dent, were well satisfied.

CHAPTER III.

IN THE PACIFIC.

AFTER a reasonable length of time under the water, the Hardshell once more sprung to the surface.

She was welcomed vociferously by the crowd on the river banks. They instantly voted the boat a great success, which demonstration was most gratifying to Frank.

"We certainly have caught the crowd!" he said.

"They could hardly do else but applaud!" declared Van Dent,

"this boat is one of the wonders of this century."

"It am jes' a dandy!" declared Pomp as he turned a flip-flap. "I done fink we hab a big 'sperience on dis cruise."

"You may have wore of an experience than you would like!"

"You may have more of an experience than you would like!" laughed Frank. "Wait until we get into the deep sea."
"Shall we travel under water all the way to the North Pacific?"

asked the Professor.
"By no means!" replied Frank. "Of course we can make better time on the surface. But at night we will travel under the surface to avoid the danger of a collision. In daylight, however, we will keep on the surface!"

"And have you reckoned the time necessary to reach our destination?"

"It will require at least a month," replied Frank. "I am going to strike the North Pacific Drift Current where it interests with the North Equatorial Current on the tropic of Cancer. This drift I shall follow north to about the forty second degree of north latitude. There is a huge basin which is of unknown depth. Before we leave those seas it will be known to us at least how deep that basin is."

"I believe the last sounding made reached the depth of thirty

miles," declared the professor.

Thirty miles under the sea.

This enormous depth seemed appalling, yet it was really but a tithe

of the distance to the earth's center.

The hole or basin or sink, whatever it was, might be fully five times that depth and yet approach nowhere near the earth's core, or even

make any appreciable progress through its crust.

However, Frank Reade, Jr., was much in earnest when he declared his intention of learning the exact depth of this wonderful deep-sea

"That is," he said in modification, "if the Hardshell will stand the

pressure," and he looked miscalevously at the professor.

Van Dent ignored the insinuation, however. He procured a camp

chair and seated himself on deck before the pilot-house.

Down the river the submarine boat glided, and in due time reached the sea.

Frank headed the Hardshell straight for the Bermudas.

Thence he intended to make a straight course across the Equator to St. Paul Island, and then it would be a straight line south to Cape

Once around Cape Horn, he intended to strike directly into Oceanica and thence north into the Big Drift which skirts the shore of the Aleutians and merges into the Behring Sea.

By daylight the Hardshell traveled on the surface.

Her electric engines were powerful and capable of developing great speed.

She made swift progress.

At night she descended some feet under the surface to avoid the possibility of a collision. Her speed was not so great under water, as of course the resistance was greater.

At such times she sometimes ran near the bottom of the sea, and the sights revealed were wonderful indeed.

A constant and changing panorama of submarine wonders flitted before the vision.

There were coral grottoes, forests of marine plants, strange fish, uncouth sea monsters, and sometimes the sunken wreck of a ship would he seen.

But it had been agreed that no time was to be wasted in research until the return trip.

First of all they were to proceed with all haste to the North Pacific

and solve the problem of the unknown depths.

After this was accomplished it could be decided easily enough how much time and effort might be expended upon research on the way

Van Dent was satisfied.

He was as eager as Frank to reach their destination. So day after day the little Hardshell plowed on her way.

Of the incidents of the voyage we will speak but briefly, deeming the events which transpired after their arrival in the North Pacific of

Suffice it to say, that vessels were met and hailed, there were encounters with huge sharks and other monsters of the deep, and several thrilling experiences with storms.

Especially was the Hardshell given a hard rub in Cape Horn seas. But the stanch little boat managed to weather all this, and no serious mishap was encountered until they reached the North Pacific

The Great Northern Drift was encountered at a point due west from San Francisco.

Prof. Van Dent's scientific instruments showed this and speed was at once reduced.

The little Hardshell had made a long cruise and a successful one. But as her engine had been in constant use for a month, it stood to reason that they must have encountered no little wear and tear.

As a consequence, Frank deemed it best to put in at some con-

venient port and give them a thorough examination and effect what repairs might be necessary

It was some ways to the North American coast, and would mean an appreciable loss of time.

So Frank was for a time somewhat in a quandary as to what it was

best to do.

In this cilemma an island was sighted. Examination of ocean charts failed to locate it, so the voyagers reckoned that they were the first discoverers.

The submarine boat was headed for it.

"If we can find a good harbor we will stay there several days," declared Frank.

As the Hardshell approached the little isle it was seen to be quite a respectable sized oasis in the sea, with some precipitous cliffs and large forests of Alaska firs.

Seals were playing upon rocks off its shores; they did not seem to

be at all afraid of human beings.
"Upon my word," cried Van Dent, "I believe we are the first discoverers of this place. "If so, we have gained something of value upon our trip already."

"Begorra, phwat's going to be the name av the island?" asked

Barney. "Yo' might call it de Emerald Isle, it am so pow'ful green," affirm-

ed Pomp, artlessly.

"Bejabers, it's a foine place to luk fer an Emerald Isle in this part av the worruld," scoffed Barney. "Shure it's too far away for England to put its fut on the neck av the people."

"Golly! I don' fink dere am any people here fo' to do dat fing to," said Pomp.

"If there were yez may be sure ould Johnny Bull wud have his grip on 'em.'

"He would for all the opposition our present national government would make," said Van Dent, satirically, "the case of Hawaii is an example. Why, I believe that England or Germany could come over and claim Governor's Island without much serious opposition, and that is right in New York harbor."

the Aleutians so far as scenery went.

Frank laughed heartily. /
"You are a little hard upon our government, professor," he said.

"You would make them out as lacking patriotism."
"If they had more of the spirit of Washington or old Ben Franklin it would be better for the nation," averred the doughty scientist. Nobody seemed inclined to dispute the point and the subject was

The Hardshell was now every moment drawing nearer to the island, It was seen to be really a little gem and might have been one of

There were huge flocks of sea birds on the cliffs; seals were thick on the rocks and could easily be shot.

"That is a good bit of evidence that this isle is not known to the martime world," declared Frank. "If it was those seals would have been thinned out long ago."

"By England, who has no right or title in them," said Van Dent.

A cozy little harbor was discovered, and into this the Hardshell

A cozy little harbor was discovered, and into this the dardshelf sailed, and anchor was dropped not very far from the shore.

It was determined to remain here several days.

Frank wished to thoroughly overhaul the machinery, and this would require some little time.

The island certainly was not inhabited by human beings.
It seemed to retain all its primeval characteristics, and certainly abounded in game peculiar to those latitudes.

As the professor could not be of any assistance in the repairing of the machinery, he decided to go ashore for a ramble.

He took with him not a gun or his scientific instruments, but simply a fishing rod.

The mouth of a rushing river was near.

He pointed to it and said:

"If some of the sportsmen who annually visit Canada and the Northwest, could follow that stream up, they would get such sport as never fell to their lot before."

"Fish!" exclaimed Frank.

"To be sure! You shall see what a fine string I will bring back with me. Only trout and salmon run in these waters!"

"I am tempted to go myself," said the young inventor.

"I would be very glad to have you!"

"Perhaps I will before we leave the isle," replied Frank. "The

machinery must claim my attention now.

So he went below and to work with Barney and Pomp. The pro-fessor lost no time, but at once started for the shore.

There were several portable canoes aboard the Hardshell. One of

these the professor took.

He hauled it high and dry up on the shore, and then set out for the river and his much anticipated sport at fishing.

CHAPTER IV.

A FISHING TRIY.

THE professor's surmise in regard to the fishing in the island river was soon proved correct

The stream came tumbling down for miles from the hills.

It abounded in deep eddies and pools, just the lurking place for salmon and trout.

The salmon were in the river in abundance. The trout, however, were found in the smaller streams which were tributary.

The professor adjusted his tackle and put on several good salmon

Reaching an overhanging ledge he glanced down into a limpid pool

some twenty feet in depth.

There he saw fully a score of handsome fish in weight varying from ten to forty pounds, for the North Pacific salmon is very large.

One moment the professor poised his light bamboo pole in air, then he cast the flies.

He was an adept at this, and as they spattered upon the surface of the pool there was a tremendous sensation.

Up from the pool came a silver hued fish like a flash of light. Out of the water in a perfect, graceful parabole it sped, the fly se-

curely nestled in its jaws. It was a pretty cast and a beautiful rise. Now came the exciting

Down into the depths surged the fish, striving to carry the line with

His ponderous weight would have snapped the light silk with ease but for the careful skill of the angler.

Now here, now there, the captive sped like a flash of light, trying to shake off the steady and deadly pressure of the line which held him ensnared.

Steadily the professor played his fish, now releasing line from the reel, now taking it up, but seeking to tire his prey.

It was noble sport. Every leap of the fish sent a thrill coursing through his veins from

the tip of the bamboo rod which swayed like a whip.

Every moment the efforts of the silver beauty grew weaker. The pressure upon the line kept his jaws open. The water rushed down his throat in a torrent.

He was drowning himself, and now the angler assumed the aggressive.

He did not give his prey any rest, but by little jerks on the line kept him constantly darting here and there.

Until at length with convulsive flap the salmon turned upon its back and lay helpless upon the surface of the water.

Now was the time to secure the prize.

With a stout steel gaff inserted in his gills the exhausted fish was brought from its native element, a prey to the greed of man—a victim to his love of sport, and—of his stomach.

Van Dent held the fish up with delight.

"That will do for a beginning," he said, enthusiastically. "One more like him will be all I will care to carry. Then I will tackle one of the smaller streams for trout."

He went on to the next pool.

This was literally alive with fish. The cast was followed by a scramble which made the water boil.

But a twenty pound salmon got the prize, and the professor had full three-quarters of an hour of lively sport in landing him.

He now had quite a heavy load to carry. But he wished to have more sport, so he turned along the course of a little tributary to the river.

Here the trout ran in great numbers. They would average about a pound in weight, and were beauties.

The professor was not long in filling up his creel. He now had a supply of fish adequate to their needs for the present.

Returning to the spot where he had left the salmon, he now set out

for the beach.

Soon he had reached the cliffs, and later was at the spot where he had left his cauce.

Most of the day had been spent thus, but the professor did not count the time lost.

He had enjoyed such sport as one seldom finds near civilization. He

entered the cance and pulled back to the Hardshell.
Frank and Barney and Pomp had been busy with the engines, and had found everything intact.

They welcomed the professor joyfully, and Pomp hastened to put the trout and salmon in presentable shape for eating.

It was an enjoyable evening meal. The professor regaled his companions with an account of his experiences and made them all en-

"We will all take a try at it before leaving here," declared Frank.
"I am fond of that kind of fishing myself."
After the evening meal was over all went below decks, and Frank

showed the professor what had been accomplished in the repairing of

the machinery.
"I find that it has stood the strain admirably!" he declared, "there is hardly a sign of friction. It will stand the wear and tear of the trip

admirably, I am sure."
"That is good!" agreed the scientist, "fortune seems to smile upon us thus far!"

"If we can only succeed in exploring the depths of the Big Sink,

as that part of the ocean is called, we shall have good reason to be

"Indeed, yes!" agreed the professor, and he mentally reflected upon the great treat he would enjoy in looking up the various species of fish and curious creatures of those depths which the eye of man had never before gazed upon.

Certainly it was a privilege which any scientist might have envied him the possession of.

All retired for a good sleep.

The next day work was resumed upon the machinery.

Such rapid progress was made that Frank announced the task finished.

"To-morrow, we shall be at leisure," he said, "then we can explore the island for diversion."

"And do some fishin, sor!" put in Barney.

"Yes," agreed Frank, "and do some fishing. We have forgotten one thing."

"What?" asked the professor. "We have not named the isle."
"That is so!"

"What shall we call it?"

There was silence for some moments and then Barney said:

"Yez mought call it the Fishing Island."

Everybody laughed at this, but Frank quickly rejoined:
"I know of nobody upon whom the honor would sit more gracefully than the professor. Suppose we call it Van Dent's Island?"
"That is too much honor," protested the professor.
But Frank insisted, and so the island was entered upon the chart

as Van Dent's. "I will see that its location is reported to the marine department at Washington when I get home," said Frank; "and so, my dear professor, you find yourself perpetuated."

It was a lovely morning and to the ears of all came the musical roar and splash of the mountain streams on Van Dent's Isle. It was decided to go ashore upon a fishing trip and the submarine

boat was carefully anchored before being left. It was certainly a risky thing to leave it thus alone. But Frank felt unwilling to debar either Barney or Pomp from the pleasure of

Moreover, there was no apparent way for harm to come to it, as the island was evidently uninhabited. Frank believed that everything would be all secure until their return.

So the party set forth. Under the professor's guidance they were

soon in good lishing grounds.

We will not dwell upon the incidents of the afternoon to any extent, for it would require too much space and crowd out other more important matter.

However, a little experience of Barney and Pomp will not be out of place, for it was certainly humorous as well as characteristic.

The two boon companions wandered off by themselves, leaving Frank and the Professor engaged in a lively discussion of the geological formation of the island. cal formation of the island.

It was easy work for the two jokers to get bites from the salmon in the pools, for the fish were hungry, ravenously so.

But to land them was another and not so easy a feat.

Invariably the line would part or the hook would slip, and, finally disgusted with his luck, Barney hit upon what he believed would be a briliant idea.

"Begorra, naygur," he said, "it's ivident we don't know very much about fishing at all."

"Golly! I use to cotch jack fish down in Geo'gy wif mah han's dey was so plenty," cried the darky. "Yo' kin talk aboutflishin'—"
"Howld on, yez black misfit," cried Barney, "don't yez be afther

givin' us any sich a steer as that. Shure there's fish enuff here fer the hull United Sthates!"

"I believe yo', chile," replied Pomp, "but we jes' don' seem fo' to cotch 'em all de same!"

Bejabers, that's bekase we don't go to worruk roight. caught fish in yer hands in Georgy, why kain't yez catch 'em that way herei

"Specs I can," said Pomp, reflectively. "I'se williu' fo' to try!"
At this moment they came out upon a ledge, which looked down into a pool some five or six feet below.

It was the clearest of limpid water, and there upon the gleaming white sands were any number of delicious salmon.

The two fishers looked at them wistfully.

Then Pomp threw his fly.

Swish, splash, snap! A big salmon had it instantly. Then there was a commotion.

But this time Pomp did not as usual attempt to pull in the big fish direct and on its own weight.

He let it run, and then threw himself flat upon his stomach on the verge of the shelf of rock.

This was in pursuance of a plan as agreed upon by the luckless fish-

CHAPTER V.

THE ENGLISH SEALER.

"Now, yo' I'ish," cried Pomp, "jes' yo' grab mah laigs an' when I git dat fish in mah claws yo' kin pull me up—see?"
"Begorra, I do!" replied Barney, with a twinkle in his roguish eyes.
He was always up to a joke, and he now saw what he believed to be a famous chance to perpetrate one.

Had the darky suspected what was in his mind he might have changed his tactics materially.

But he did not.

Hence he came to grief. Over the edge of the precipice Pomp crept, Barney holding him by the ankles.

Below him was the pool, fully fifteen feet deep and icy cold water. Great salmon lay stoically at its bottom.

Pomp got a good hold on the line and began to draw the half exhausted salmon up from the depths.

This caused the nervous fish to make a spasmodic upward dash. It cleft the water and leaped almost into Pomp's face.
It was the darky's chance.

He made a spasmodic effort to clutch the fish. But it was out of his grasp instantly.

"Have yez got the big divil?" cried Barney.
"Golly, I done nigh catched him!" replied Pomp; "de nex' time I hab him fo' suah!"

Once more the big fish shot up to the surface.

Once more the big his shot up to the surface.

This time Pomp thrust a hand through his gills. Having once got it there his wrist was retained by the sharp edges of the fish's gills.

The salmon weighed full thirty pounds. Moreover he was what in sportsman's parlance would be called a "fighter."

"Have yez got him?" roared Barney.

"Yo' kin bet I has! cried Pomp.

"Have onter him thin!"

"Hang onter him, thin!"

And just then a very singular thing happened. In some manner Barney's feet slipped.

Of course it all seemed accidental. However it was, Pomp took a straight header down into the pool. He went directly to the bot-

Barney scrambled to the edge of the shelf of rock. His little joke would have been a glaring success could he have controlled his laugh-

But so comical did it all seem to him that he felt called upon to lie down and fairly shriek with mirth.

Meanwhile, Pomp came spluttering up from the bottom of the pool, where the salmon had all fled at his approach.

All save the thirty pounder fastened to his wrist, and this one proceeded to make his life miserable.

Nothing Pomp could do, could free his wrist of this weighty encumbrance. The big fish floundered, and plunged and fought save

It threw water in clouds into the darky's face. It literally towed him round the pool, and Pomp was only able to scramble out after a desperate effort.

He drew himself out of the water chilled to the marrow of his bones. A blow upon the rocks killed the salmon, and he freed his wrist. Then for the first time he heard Barney's uncontrolled laughter and took in the situation.

As it flashed across him that he had been made the victim of a

practical joke, the darky was very angry.
"Yo' done dat on puppose, yo' sassy Pishman!" he yelled. "I git square wif yo' fo' dat!"

Like an enraged lion Pomp rushed up the incline, and straight for

With head down the darky charged for his tormentor.

So swift was the assault that Barney had hardly time to recover from his laughter and dodge.

The darky had not miscalculated, however. His head took the Celt. fair in the stomach.

Barney went over like a ten-pin. Retribution was sure and swift. Being near the edge of the pool he was unable to recover himself, and suddenly went over into the water.

Down he went, and came up spluttering and mad as a hornet. It was now Pomp's turn to laugh.

The darky could not help but be satisfied with such signal revenge.

He fairly burst his sides with laughter.

"Ki-yi," he screamed, "done fink yo' am smalt don' yo' I'ish.
Who get de bes' ob dat, eh?"

Barney, much crestfallen, crept silently out of the water and silent-

ly began to wring his soaked garments.

What would have been the further outcome of the affair it is not easy to say, for at that moment an incident occurred to change matters and in a startling manner.

A loud cry came from a point below.

Frank Reade, Jr.'s voice it was.

"Barney and Pomp! Come, lively! we must go back to the boat!"

At the same moment the two jokers saw the cause of Frank's alarm. From this point they had an excellent view of the harbor, and there they saw a three masted vessel which had come around the lower end of the island quite unperceived.

What was more a boat was putting out from this vessel and head-

ing for the submarine.

The purpose of the newcomers was doubtless to ascertain the character of the strange craft which they saw at anchor, and which had not answered their hail.

To them it was doubtless a mystery which they were inclined to solve.

What their character of course it was not easy to guess.

That they were pirates was hardly likely in these seas. However, they might be unfriendly for all that.

So the submarine voyagers all hastily scrambled down over the rocks to the beach.

They piled into the canoe and gave way at the paddles. Straight for the Hardshell they pulled.

It was now a race to see which craft reached the submarine boat first.

The canoe, however, was lighter and swifter and reached the Hardshell a trific in advance.

All scrambled on deck. At the same moment the ship's boat ran alongside.

"Ahoy there!" came the hail from the lips of a surly looking man in the bow, "what craft is that?"

"The submarine boat Hardshell," replied Frank. "Who are

"We are the English sealer, Clytie, from Vancouver!" was the reply; "we took you for a Yankee sealer!"
"Well, you are mistaken!" replied Frank.
"Are we?" retorted the surly fellow, with a sneer. "We shall see. Perhaps you can give us an explanation of your business here?"

"I know no reason why I should!" replied Frank, coolly. "I am in no wise under obligations to do so."
"Then we will seize your yacht."
"Seize it?"

"Yes!"

The submarine voyagers were astounded. Frank was angry.
"What are you talking about?" he cried. "You have no right to
interfere with us. We are American citizens, and under the protec-

interfere with us. We are American citizens, and under the protection of the United States flag!"

"Humph! hang your flag! These are British waters, and we have caught you sealing illegally. We are specially appointed police to protect the interests of Great Britain in these waters!"

For a moment there was a dead silence; then Frank said icily:

"I don't care who nor what you are. This island was discovered by us first. We have been ashore first and have a prior claim. As for these waters we are far beyond any limit under the jurisdiction of Great Britain, and you meddle with us at your peril!"

"You can't bluff us that way!" hissed the pig-headed sealing captain. "You will consider yourself under arrest!"

"You have got no authority to arrest me," retorted Frank.

"You have got no authority to arrest me," retorted Frank.
"We'll see!" gritted the sealing captain, "run alongside men!"

The next moment the British captain sprang upon the deck of the of the submarine boat.

He advanced boldly and attempted to place a hand on Frank's shoulder. In anther instant Barney and Pomp would have been upon

shoulder. In anther instant Barney and Fomp would have been upon him like tigers, but Frank cried:

"Stand back! I will deal with this cur myself!"

"You are the one to be dealt with." declared the British captain pompously. "In the name of the Queen I arrest you!"

Frank folded his arms and gazed keenly at the Britisher.

"Before we go any further," he said, "what do you attempt to arrest me fer?"

"For trespassing on her Majesty's sealing grounds. I have no doubt the hold of your craft is full of skins!"
"Then you are dead wrong!" said Frank, sternly, "there is not a sealskin aboard this boat. What is more we are not sealers. You have made a mistake!"

"You'll come down to Vancouver with me anyway and set your-self right!"

"I will do nothing of the kiud," replied Frank, keenly. "Now I warn you to leave the deck of my boat or I shall forcibly expel you!"

"I'll take you aboard the Clytie myself," he gritted. "Come along you upstart!"

He placed a rough hand on Frank's shoulder. The next moment he

was in a position to regret his rashness.

A swift driving Yankee fist took him full between the eyes. Another lightning-like blow caught him back of the ear and he went down like a felled ox.

This was not all.

Barney and Pomp sprang forward and hurled him over the rail into the sea.

There he desperately floundered about until picked up by his crew. A madder man never graced the earth.

He made the air blue with his oaths.

"I'll send ye to the bottom, the whole Yankee lot of ye!" he yelled furiously. "I'll have your lives!"

"I think he means what he says," declared the professor.

"He is a coward and a bully!" declared Frank.

"That may be, but he evidently has a gun aboard his ship. If he should give us a shot-

""He would send us to the bottom," cried Frank, "that is right enough. We must get out of the way quickly!"

That the British captain would fire upon them there was no reason

to doubt. The result would be serious.

CHAPTER VI.

INTO THE DEPTHS.

FRANK READE, Jr., had no intention of risking the fire of the Clytic. Barney and Pomp were tugging at the anchors.

Frank saw that there would not be sufficient time to get them aboard.

so he cried:

"Into the cabin every one of you! We will take them aboard under eter!

This would put the Hardshell certainly in a position of safety. The Move was quickly executed.

The Hardshell sank in fifty feet of water. Her topmost mast was out of water.

But no shot could do her harm now.

Barney and Pomp now donned some diving suits, which were the invention of Frank Reade, Jr.

They were unlike the ordinary diving suits, in that there was no air pump or life line.

Upon the diver's back was placed a chemical generator. This would

last a long while and furnish plenty of air to the diver.

Between the cabin and the deck was a vestibule. To go out on deck

without flooding the cabin this was used.

First the diver could step into the vestibule and close the cabin door. Then by pressing a valve the vestibule was flooded and the liver could open the door to the deck and walk out.

To return, it was necessary to close the door to the deck and press 4 valve which expelled the water from the vestibule by pneumatic bressure.

Barney and Pomp thus equipped, went out on deck and quickly itowed the anchors aboard.

Then they returned to the cabin.

Frank went into the pilot house and started the machinery.

The submarine boat glided directly under the hull of the British

It would have been an easy matter to have punctured her hull and ent her to the bottom. But the Hardshell kept on out into the open sea. After running

some miles she went again to the surface.

All was now ready for the submarine dive of miles into the ocean depths.

For several days the Hardshell ran rapidly northward.

Then one day Frank took his bearings with a good deal of care, and

said:
"We are now directly over the Great Sink, or the spot where all foundings have failed to reach bottom.'

"Then we have reached our destination," said Van Dent, coolly. "Now we are ready to go to the bottom."

" Yes."

"If the sea is not bottomless here."
"We will find the bottom," said Frank, determinedly, "but, now before we take the plunge, take a good look at the sky. It may be a long time before we shall see it again.

" If ever."

" That is possible."

Instinctively all looked at the sky, at the sun and across the surface

It was an impressive moment.

They were about to take a fearful plunge into ocean depths; no-body could say how far. They might never return.

If the theory claimed by scientists was a fact that the pressure

of the water at that depth was so fearful then it was possible that

the boat might be fearfully crushed.

"Now," said Frank, "if there is any shirking feeling present let us know it. If one of you is ready to repent of the undertaking say so now and I will put him ashore."

Barney looked at Pomp and said:
"Divil a bit, sor!"

"Golly, I'se ready to go, Marse Frank." Van Dent looked amazed.

"Why not turn back now if you don't really want to go yourself, Frank?" he said.

This settled it in Frank's mind.

He instantly turned and went into the cabin.

The submarine boat floated in a calm sea. Frank rang a little bell as a signal.

The others sprang into the cabin; click! went the doors and windows, sealed hermetically and destined to remain so for a long time.

Then there was a rush of water into the tank and a sinking sensa-

on. The light of day vanished.

The electric lights blazed forth; water was all about and visible through the plate glass windows.

The great journey below the surface of the sea was begun.

Down, down, and still down.

Prof. Van Dent hovered about the water telescope in the hull of the boat, but no sign of the bottom appeared.

The boat was sinking with great velocity.

Frank reckoned at the rate easily of fifteen miles an hour. There

As yet, those in the cabin had felt nothing from the pressure.

Frank in the pilot house was watching the gauge. This indicated the rate of pressure to the square inch upon the hull of the boat.

Another gauge also recorded the distance from the surface. The lower the boat sank, the less her speed became. This showed the natural bnoyancy which might be expected at such depths.

The submarine navigators stood in the cabin of the boat and the

silence was painful.

It was certainly a most impressive moment and an awful realization

which was upon all. They were now far from the light of day-far from the upper world. Buried in the awful depths-literally buried alive! There was no

certainty that they would ever return. It is quite impossible to depict in words the sensations experienced

by all. Their faces were drawn and ghastly in the glare of the electric light.

Frank Reade, Jr., was perhaps the coolest of all.

But for his iron nerve and intense determination the expedition might have been repented of then and there.

But he had set forth to make a visit to the bottom of the Great Sink. It mattered not to him what the depth—he would go on. It was really a mighty undertaking. Only the human imagination

can picture how mighty.

Down and still down sank the boat. Frank kept his eyes upon the gauge. He marked the feet as they drifted into yards and the yards into furlongs.

Ten, fifteen, eighteen miles they were now beneath the surface. Was there no bottom?

But now a strange surprise awaited all.

The pressure gauge began to drop. It had once nigh reached the highest safety mark.

Frank's hand had been upon the pneumatic expulsion valve ready to send the boat to the surface if there was any danger of her being

But now the gauge began to drop. Frank and the professor exchanged startled glances.

"How do you explain that?" asked the young inventor. A great light burst upon the young inventor. "I have it!" he cried.
"Well?"

"We have passed the danger point, that is the highest point of essure. As we draw nearer the bottom, the pressure according to some peculiar law of equality, will decrease, just as it would in nearing the surface." pressure.

It was an astounding reflection.

"This is contrary to all scientific conclusions," said Frank. "Science does not always find itself able to solve the strange things

of this universe correctly."
"I believe you!"

"We are constantly coming in contact with opposites, which completely overthrow the best of logic. Calculations do not always count, for Dame Nature is indeed contrary."

"Which is very trne," agreed Frank, "and I tried to convince you of that fact before we started upon this cruise. If there was such a deadly pressure at these depths, and if it increased in a proportionate ratio as figured by our solutions, the encorrous which of water would ratio as figured by our scientists, the enormous weight of water would crush the earth's shell itself. Now we find that after passing a certain point the downward pressure decreases."

"Which is now easily seen!" agreed the professor. "What more logical than that the pressure should become more equal at a certain point, for such a depth must necessarily at a certain point have a certain upward pressure."

"Exactly!

"Exactly!"
"Then we shall be able to reach the bottom of the sea at any depth. It was only necessary for the Hardshell to be able to resist the pressure at that one critical half way point."

"And she has done so!"
"Hurrah! This is a triumph. See how much clearer and more limpid the water has become. What is our depth now?"

"Thirty miles!" The two men looked at each other for a moment with strange emotions.

Thirty miles below the surface of the sea. It was a stupendous thought, an incredible reflection.

Yet it was the truth.

It was living evidence of the fact that nothing is impossible of accomplishment by man, if only the right means are employed.

Thirty miles below the surface of the sea and still traveling down-

The bottom must be fully thirty miles lower yet, if the center of pressure, or the highest point, at least, were to be accepted as half way

The Hardshell had ceased its jerky motion, and traveled downward with a steady motion.

The old-fashioned theory, that fish did not exist in these depths, was

exploded.

The boat passed through whole schools of them. They were many of them of a species never seen before by the navigators.

Throwing the electric light downward a marvelous sight was revealed.

It was as if the boat was sinking down into a submarine Aurora Borealis.

This was a matter of much wonderment to Barney and Pomp, and the professor undertook to explain it to them.

CHAPTER VII.

THE BED OF THE DEEP SEA.

THE marvelously beautiful shades and rainbow hues were made by refraction of the rays of the electric light, in certain stratums of the

water, making in fact a sort of ever-changing and receding prism.

Thus the professor explained the matter to Barney and Pomp, to their satisfaction if not their complete comprehension.

Down and down the boat continued to sink.

Five hours it had continued its downward career, when suddenly a

startled exclamation escaped the professor.

He had been looking downward and now beheld a startling sight. "The bottom!" he cried "Hurrah! we have reached the bottom!" All rushed to the observation window.

This was seen to be the truth.

The bottom of the sea was just below, and a wonderful scene it presented.

It was like a floor of white marble extending as far as the eye could reach.

No submarine plants were in view, but the floor of the ocean was strewn with strange looking deep sea monsters.

Some of them were leviathan in size and swam hastily away before

the glare of the electric light.

They were of several varieties, some resembling an alligator, another a cross between a sea serpent and a whale, and yet another betwixt a hideous cuttle fish and a crab.

These were inhabitants of the greatest depths of the ocean, and certainly had never seen the light of day.

They spent their lives at the bottom of the sea and all in a world of their own.

This reflection crossed the minds of the navigators.
"Golly!" gasped Pomp; "is dar any danger ob dem big critters
swallowin' de boat?" All laughed at this, but indeed, it did not seem far-fetched.

The submarine boat, after its long journey, alighted upon the floor

of white, which was seen to be a curious crust of coral formation.

It easily crushed beneath the weight of the boat, revealing the

sands beneath.

Barney sprang to the search-light and flashed its rays in all direc-

Frank and the professor looked at the gauge and gasped: "Sixty miles, from the surface!"

It was an appalling thought.

Sixty miles of water above them! All that distance between them and the blessed light of day.

The search-light penetrated the darkness for a great ways, but as far as could be seen the same white floor extended.

After some time spent in survey of the surroundings and of a general retrospect, Frank decided to go on along the bed of the ocean.

He took that direction in which the ocean bed sloped downward. "We want to go to the lowest depth while we are about it!" he id. "We must establish a record."

"One which nobody else will ever beat!" declared the professor. "At least they will have trouble to do it and return alive!" declared Frank.

"We may not do that."

"It is worth a life time to be in our present position."
"That's true!"

The Hardshell made its way along through the lower depths keep-

ing a dozen feet or more above the bottom.

Suddenly a startling sight burst upon the view of all.

The coral formation had crept up and made an arch over them. It was not only beneath and upon either side, but made a roof

above "Hold on!" cried Frank, in startled tones, "let's make an investigation."

Barney brought the Hardshell to a stop.

Then the search-light was put to work. The result was startling to say the least.

It showed that they had suddenly and most unwittingly entered an

immense coral cavern. It extended downward, how far they could

only hazard a guess. "This is curious," declared Van Dent. "What ought we to do, Frank?"

The young inventor was hopeful.

At first he had thought of turning back. Then an idea occurred to

him. "Why not explore the cavern?" he cried. "Go ahead, Barney!" " All roight, sor!"

The submarine boat went ahead.

Deeper into the cavern it sailed; now it emerged into a mighty high arched cavern chamber.

There were mighty pillars and arches all enameled with coral. It was a marvelous sight.

What a reflection! Sixty miles below the surface of the North Pacific and exploring a cave which probably far outclassed the famous Mammoth Cave of Kentucky.

There were many passages led from this cavern. Which one to

take was a question.

For Frank was determined to continue the exploration. "It may lead us to the center of the earth," he declared, "who can tell?"

This indeed was logical theory, for the passage continually trended downward.

The Hardshell kept on down one of the passages selected by Frank. Still the cavern did not seem to come to an end

Numerous passages branched from this one. Indeed the cavern was a veritable submarine labyrinth.

Startling adventures were near at hand.

Suddenly as the submarine boat was passing through a broadening section of the cavern, there was a rush of water against the pilothouse window.

Barney at the wheel saw a tremendous body coming down upon the

boat like an avalanche.
"Mither av Mary!" he just had time to gasp. "Shure, it's the divil, Misther Frank!"

Barney and Frank, who sprung to the spot, had just a momentary glimpse of the attacking foe.

It was a submarine monster, the like of which they had never before seen or heard of.

In size it was elephantine. In form it was half fish, half dragon, with ponderous jaws and hideous baleful eyes.

For, unlike the most of fish at this depth, it had eyes, and powerful ones as well, as its aim for the Hardshell attested.

At no stage of the journey had the tough steel shell of the boat stood a harder siege than now. The mouster crashed down upon it with the force of a locomotive.

It seemed for a moment as if the Hardshell must literally go to pieces.

Everybody on board was prostrated, and objects in the cabin were hurled violently about.

There was a terrible crash, the machinery buzzed, electric sparks played in the air of the cabin, and not one in the party but really expected that this was the end of the trip, and that death must surely claim them.

The attack of the cave monster was indeed terrific. But once more the Hardshell proved itself invulnerable.

The submarine boat was dashed against the cavern wall. The cave

monster had struck her full in the bow. The bowsprit was raked badly and the stays were broken, but the

sharp steel bow proved a little too much for the monster's head. It fairly split its lower jaw, and filled the water with a cloud of red blood.

In a circle the monster whisked around and came back for the boat. He struck the heavy iron shell with all force.

But the Hardshell did not crush. Moreover, the blow seemed to

stun the big fish.

It lay gasping upon the bottom of the cavern inactive for a while. By this time the navigators had recovered themselves and all rushed

to the observation window to take a look at the stricken fee.
"Mercy!" gasped the professor. "What saved us from being crushed?

Indeed, it seemed nothing short of a miracle, the monster was so

huge and powerful.
"Golly, I done fink he could hab swallowed us if he had tried hard," cried Pomp.

"Bejabers, he nigh broke the back aff me," growled Barney.

"He is a curious fish to be sure," said Frank. "Certainly there is nothing like him in the upper seas."

"I should say not," agreed the professor. "It would hardly be safe for a wooden vessel to navigate the sea if there were!"

But the sea monster began to evince signs of sbecoming lively once

Being unwilling to risk another encounter with him, Frank cried: "Go ahead, Barney! Let's get out of here as quickly as possible!" " All roight, sor."

The boat shot forward down one of the passages: In a few moments the danger was past.

After this, sharp lookout was kept for monsters of this ilk, for encounter with them was by no means pleasant. On the submarine boat kept for some while through the cavern

passages.

Finally as there seemed no indication of their coming to an end, Frauk cried:

"Turn her about, Barney. Let's go back to the open sea!"

The Celt obeyed; but now for the first time it became apparent that a great blunder had been committed.

The passages all looked alike.

Barney was at a complete loss to tell which was the right one. There had been no way of marking them; neither was there any way now of identifying them.

The boat kept on for hours, but yet did not emerge from the cav-

An interminable labyrinth of passages were upon every hand.

What was to be done? How were they to find the way out of this intricate maze? In his bewilderment Barney called for Frank Reade,

CHAPTER VIII.

LOST IN THE LABVRINTH.

Ir required but a few moments for the young inventor to gather the whole truth from Barney.

He saw at once the hopelessness of their predicament.

His face was ashen-hued.
"My God!" he gasped. "We are lost forever in this labyrinth!"
Professor Van Dent heard the statement and came in.

"Lost!" he exclaimed.
"Yes," declared Frank, "hopelessly lost!"

"Not so bad as that, is it?"

"Well, perhaps you can tell me a way out of this scrape!"
The professor glanced at the depression gauge, and gasped:
"My soul! We are seventy miles from the surface. We are ten miles deeper and have been traveling downward all the while."

This most astounding fact palled upon the senses of all.

"Golly!" gasped Pomp. "We'se in a drefful bad fix."

"Begorra, it's about toime to say our prayers," exclaimed Barney.

"Begorra, it's about toime to say our prayers," exclaimed Barney. But Frank Reade, Jr., was not the one to yield to despair.

"Keep a stiff upper lip," he said. "We are bound to find our way out some time; what is more, we have at least two years to prolong the effort; we have sufficient provisions for that length of time, and as for air—why there are chemicals enough aboard to last an indefinite period."

This was true, and the navigators drew a breath of relief.

It was too soon to abandon hope very plainly.

Before two years could elapse, barring any accident to the submarine boat, they should certainly be able to find a way out of the la-

So the Hardshell kept on in its quest for a way out of the labyrinth. The search-light was sent in every direction, looking for a possible

outlet.

Passage after passage was tried, but inevitably it was found only to

lead into some other passage. And thus the quest went on.

And the hours passed slowly and tediously to those on board.

There was no varying of scenery; only the same white walls of coral ever encompassed them.

This was, to say the least, monotonous, and the navigators felt it severely. Yet no one grumbled.

Pomp provided good meals as usual though, as Frank advised, he economized in quantity so that the provisions might be sure to last. Two days passed thus.

Still they were buried in the labyrinth. It occurred to Frank on

the ninth day to look at the depression gauge.
His eyes bulged and he called Van Dent to the spot.
"Read that register," he said. "Is it right?"
"We are ninety miles in the heart of the sea!" "Or that much nearer the center of the earth!"

"Where is the end of this labyrinth?"

"Perhaps it goes down through to the very bowels of the earth."
At least it was a certain fact that the submarine navigators were every moment getting further and further away from the surface of

Every passage into which they turned seemed to continually lead them deeper and deeper.

What would be the end of it all? This was a startling question.

Two days more passed.

They had now been nearly a week in the labyrinth. Still they were getting further and further away from the surface.

And now a species of depression seized upon all.

It was an irresistible thing which could not be dispelled. It seemed to grow upon them.

Frank was the least affected of all. But yet he was not entirely

Certainly it was not a pleasant sensation, and did not tend to improve the situation at all.

All fell to moping, and Van Dent would remain moodily shut up in his state-room for hours.

What would have been the end of this distressing state of affairs, but for an incident it is not easy to say.

But suddenly the labyrinth began to merge into one mighty, high-

vaulted chamber. At once the idea seized all that at last they had reached the end of

the labyrinth and were again to emerge into the open sea.

"Thank God! we are getting out of this submarine tomb!" cried Van Dent, delightedly. "Certainly we must be thankful."

"I hope your prediction is correct," said Frank.

"Have you any reason to believe that it is not?" asked the scientist,

testily.
"I shall accept nothing but clearly proven facts," said Frank.
"Bearing what seemed to be a mighty subm The boat glided now into what seemed to be a mighty submarine vallev

Nothing could be seen of a cavern roof above. The rays of the search-light could not travel far enough upward to penetrate the dark

The Hardshell now rested for a time in the submarine valley. The strain of the past few days upon the navigators had been intense. But the revival of their spirits was most magical.

From the deepest of gloom they seemed to suddenly spring into enthusiasm and joy unbounded.

This was caused by the certain belief that the open sea had been reached once more.

But Frank once more consulted the depression gauge. He felt a strange sort of awe.

Van Dent read the record aloud over his shoulder:
"One hundred miles below the surface of the sea."
Words cannot describe the sensations of the submarine naviga-

A strange spell of deadly desolation, of loneliness, came over them. It was such a feeling as one might experience were he to be suddenly transferred to a strange planet far from the earth, and with apparently no hope of ever getting back.

The last man upon earth, the wanderer lost in an awful wilderness

The last man upon earth, the wanderer lost in an awiti wilderness might experience this same utterly desolate feeling. It was so strong as almost to prostrate soul and body. Less resolute brains might have turned with stark raving madness.

"One hundred miles below the surface of the seal" muttered Van Dent, huskily. "Will we ever get back?" For a moment Frank's hand was upon the pneumatic lever which would expel the water from the tank and send the boat flying upwards.

An irresistible impulse was upon him to get back to scenes of the

upper world as quickly as possible. It was a mad longing for home, for the scenes and the element he

had just left. Only the strongest effort of the will enabled Frank to conquer this

impulse. But he did conquer it and instead sent the boat flying down the

dark valley.

It seemed to grow wider and deeper as they advanced. Suddenly an astounding thing happened. The Hardshell began to rock violently. Then Frank saw a fearful

commotion in the water beyond.

It looked as if a million huge churns were thrashing it into foam

and chaos. Some terrible power was there at work.

"My God!" screamed Van Dent, "don't become drawn into that vortex! For the love of Heaven, back!"

Frank reversed the engines, but it was too late.
The tide had caught the Hardshell and swung it about like a top.
So swift were its revolutions that none on board knew what was happening, or what was to be their fate, or where they were being

But there was a terrific sensation of being hurled on and over and up, and then after an interminable spell of this sort of thing, there was

Frank and the professor pulled themselves out from under a shelf where they had been driven. Barney was wedged under a sofa and Pomp was standing on his head in a closet.

It required a full minute for the demoralized navigators to pull

themselves together.

Then they were conscious that the submarine boat was being gently borne forward on what seemed a powerful wave.

The search-light showed they were being hurried along through a swift flood of water. They were not on the surface, but yet were certainly once more in the open sea.

"Great Jericho!" gasped Van Dent. "What happened to us?"

Frank staggered into the pilot-house.

He glanced at the depression gauge.

"Look," he said huskily, pointing to plainly the elevation of eighty miles.

"Eighty miles!" gasped the professor.

"Why we were one hundred miles down not twenty minutes ago!"

"The two men stared at the gauge. They could hardly believe their

Then Frank went up and examined it.

It was in perfect working order; the registration was correct.

It meant that they had vaulted upward twenty miles in as many

minutes. A mile per minute they had been hurled upward by some strange force. What did it mean?

Frank went to the obsevation window and looked out.

Slowly a solution of the apparent mystery dawned upon him.
"I have it, Van Dent!" he cried, suddenly.
"Well!" exclaimed the professor.

"We have been in the embrace of a submarine whirlpool, possibly a geyser, which springing from the bowels of the earth sends the water up in a revolving spout for this twenty miles. Its effect may not be felt at the surface."

"In other words we simply ran into the embrace of a mighty deep sea boiling spring?" cried the professor.

CHAPTER IX.

THE DIVING BELL.

"EXACTLY," agreed Frank

"And that was sufficiently powerful to carry us up for twenty miles in as many minutes."

"That is just it."

The professor scratched his head reflectively.

"There's one thing sure," he said, "if we live to get out of this scrape, we can claim that nobody else ever had an experience to equal it. We stand alone as submarine navigators." it. We stand alone as submired in You are right," agreed Frank.

"You are right," agreed Praus.

The spirits of all now were bright once more.

A mere trifle of eighty They were twenty miles nearer the surface. A r miles below the surface was now nothing to them.

They were initiated.

No longer fear dominated their beings. Like true adventurers they thought only of pressing forward to new and more thrilling experi-

This is the proper morale for successful adventuring. Barney turned a flip-flap, and Pomp stood on his head, this time of his own

. The submarine boat ran for a dozen miles at full speed, to get out of the influence of the revolving current.

"Shall we go to the bottom again?"
"No need of it," cried Van Dent, suddenly, "we are there already!"

This was seen to be a startling fact. There was the bottom of the sea once more beneath them.

They had emerged from the deepest part of the Big Sink. From this

point on the ocean should grow more shallow as they progressed.

This suggested to Frank the idea of following the ocean slope, and thus eventually gaining the surface.

This might bring them up somewhere near the Aleutians, or possibly further west.

In any event it would be a sufficient consummation of the deep sea vovage.

So it was decided upon.

At points the rise in the bed of the ocean was quite marked, amount-

Ing sometimes to a series of precipices.

The submarine sailed along the face of these sometimes for miles.

Prof. Van Pent could not help noting one very remarkable fact.

"If there was no water to cover this wonderful territory," he said,

"it would far eclipse anything above the sea's surface. Such pre-

cipitous heights, such mighty mountains and rugged valleys, have no equal anywhere else on the globe."

"Indeed, I believe you are right," agreed Frank. "I have never seen anything to compare. Not the mighty Himalayas are in the same class with these tremendous submarine mountains."

Since the experience in the labyrinth, nothing had been seen of any mighty monsters of the deep.

They seemed to flee before the submarine boat in utter terror. The electric light doubtless dazzled them.

The professor, and Barney and Pomp, as well, were possessed with a desire to venture out in the diving suits.

Van Dent was extremely anxious to secure some of the fine speci-

mens of coral which were visible upon all hands.

But Frank shook his head.

He hardly deemed it safe to venture out.

"I fear that the diving suits will not be as effectual in resisting the pressure as the shell of the boat," he said. "Wait until we get near-

"And there the specimens will not have the intrinsic value which they would if secured at this wonderful depth," said the professor.

Frank did not dispute this, yet he could not refrain from cautioning

"I have a better plan by which you can secure your specimens," he said, "and at comparatively little risk."

"That will be all the better," said the professor eagerly. "What

"Come with me."

Frank led the way down into the lower hold of the boat. Not until they were in the lowermost part of the craft did he balt.

Here was a little platform built alongside the keel and also a bell

shaped contrivance with a little door in the side of it.

This bell was of heaviest plate glass set in a steel frame. Frank pressed a valve and an electric light flashed up from the interior. "Why," exclaimed the professor, "you have never showed me this before!"

"There are many other things I have not yet showed you," declared Frank. "This is one of my out of the way inventions.".
"I believe you," agreed Van Dent. "It is certainly out of the way

"Come into the bell with me," said Frank.

The professor complied.

Frank closed the little door. Then he pressed a spring and a section of the flooring slid back.

Below was the water and the professor saw that the bell had dropped down below the keel and that water was all around them.

It was really a diving bell of the common pattern and so arranged that objects upon the ocean floor could be picked up with ease. professor was delighted.

"All you have got to do," said Frank, "is to sight some object

upon the bottom which you think you want and we will go and pick it up."
"Yonder piece of coral!" cried the professor.

Frank touched an electric key which communicated with the pilothouse where Barney was on hand.

The submarine boat came to a stop and swayed a trifle to the right.

The diving bell descended and the piece of coral lay at the professor's

He simply reached down and picked it up.
He was delighted.
"Wonderful!" he cried, "this is indeed far preferable to venturing out in the diving suits.

"I thought you would agree to that!" declared Frank.

The professor spent some time in thus securing his specimens, and so cleverly did the contrivance work that he did not even wet his feet.

After a time, however, he announced that he was satisfied and then

the bell returned to the hold, and they went again back to the cabin.

The professor was thus able to add largely to his collection and naturally was delighted. So the diving expedition was put off for a

But slowly and surely the submarine boat crept up out of the mighty depths of the sea.

None of the navigators were sorry that they were nearing the surface.

To tell the truth, they had accomplished the feat of visiting the lowermost depths of the Big Sink and were entirely satisfied.

It would indeed seem good to take another look at daylight and

this anticipation they now enjoyed.

Mile after mile the surface drew nearer.

The ocean had now became more varied and interesting.

Many strange features were encountered. Once they came upon a

petrified forest, with gnarled trunks and scrawny limbs.

Though devoid of foliage it was as real as could be well imagined.
The Hardshell passed over this.

Beneath, and hiding in its recesses were giant crabs and sea dragons of the strangest shapes and colors. Such a vision was one never

to be forgotten.

Prof. Van Dent was right in his element.

Never was he more genuinely happy; he had added great stores to his collection, and also gained many points of value in a scientific sense.

Barney and Pomp were of the kind who are always contented any-

lt would have mattered little to them to have spent their lives in the depths so long as they were with their beloved master, Frank Reade,

But the young inventor was cleverly figuring his way back to the upper world.

As well as possible he had made several reckonings of their position. As near as he could reckon they were not far from the Aleutians, and must come up eventually in their vicinity.

Up and up the submarine boat kept creeping.

In its slanting course, of course many miles here could be covered additional to the sheer depth.

Frank did not proceed with speed, as every peculiarity of the ocean

depth was aken up and made a study of. One day the gauge showed that the surface was not ten miles above

Really, this was an enormous distance, but comparatively only a

short ways. The navigators were in high feather.

Thus far the submarine expedition had been a glowing success. The boat was in good condition, her machinery being all right and Frank declared:

"She will take us back to America as handsomely as she brought us here!"

But thrilling incidents were yet to transpire before they were to see home again.

One day, just as they were sitting down to a sumptuous dinner prepared by Pomp, the first of a train of thrilling incidents occurred. There came a terrible crash, and a yell from Barney in the pilot-

Everything seemed going to smash. Everybody was hurled to the floor of the cabin, and the entire dinner, dishes and all, was swept

The submarine boat seemed going all to pieces.
"Mercy on us!" screamed the professor. "What has happened?"
"We have run into something, I believe," cried Frank.

Then he sprung for the pilot-house. Barney was hanging to the

"What on earth is the matter?" cried the young inventor, as he rushed in upon the Celt.

For a moment the Irishman could not answer. He was the victim of awful terror.

"Shure, sor, it's the divil is afther us," he cried.
"The devil?" exclaimed Frank. "Talk sense, Barney. What is it?"
"Divil a bit do I know phwat it is, sor," cried the Celt. Then he gave a wild yell.

"Shure, sor, there it comes for us agin, bad luck to it."

CHAPTER X.

STRANGE MONSTERS OF THE DEPTHS.

FRANK glanced out of the pilot-house window and beheld a most thrilling sight.

A literal monster was coming at railroad speed for the boat. What its species Frank could not at that moment tell. But it was

a giant fish, a cross between a sculpin and a whale. A great hideous mouth was wide open—with awful jaws. Great fins

were expanded from the gills outward. Its color was a bright crimson, and its tail was long and eel like.

This unknown species of sea devil bore down upon the Hardshell

like a railroad train.

Like a mad thing it came. The next moment it struck the boat fairly abafa the rail.

The commotion created by the shock was fearful. Everything was

piled up in a heap.

"Mercy on us!" screamed Van Dent, "another blow like that will knock us to pieces." Indeed, this was not an unreasonable hypothesis. Frank knew it

and acted. He knew that the big fish would be sure to return to the attack. It

was already drawing off for another run. He instantly sprang ts the keyboard and pressed a little button. The steel shell of the boat was connected with the dynamos in such

way that it could be completely charged with their force.

This was equal to a tremendous shock, enough to kill a dozen men. Surely the sea-devil would meet his match this time.

But on he came unheeding any such possibility as this.

He recognized in the boat only a rival sea-devil, and meant to

annibilate it if he could.

So down he swooped again upon the recognized opponent. But

his time the opponent was ready.

A large sized surprise was in store for that sea monster.

"Hold on hard!" yelled Frank. "Look out for a shake-up!"

And a shake up it was!

The fish struck the boat again at full speed; but this time it received

a sorry reception.

The lightning stroke could not have been more deadly. The sea monster was literally kicked back a dozen yards or more.

It was the end.

There was one convulsive flop and over on its back it turned; it floated a corpse past the pilot-house.

"That pugnacious fellow will never attack another boat," cried Frank. "If ever fish got a dose that one did."

"You are right!" cried the professor, "and it's lucky for us!"

"Begorra, the baste gave me a dose!" cried Barney, as he rubbed his bruises in a rueful way.

The Hardshell was badly shaken up, yet did not seem to be serious-

ly hurt. The boat was quickly speeding on her way again.

Frank looked at the register of the depression gauge; they were less than five miles from the surface.

In fifteen minutes the Hardshell could have been again in daylight. But the young inventor decided to go further before abandoning the

truise.

But Barney had barely taken his place in the pilot-house again,

The Hardshell was hardly a dozen feet from the bottom of the ocean. Suddenly, from a mighty orifice in the bed of the sea, long arms that up and folded themselves completely over the deck of the boat. It was drawn down with the power of giants, though the move was

instantly fatal to the monster that had done it.

The hull was yet charged, and the terrific force of the current killed the giant octopus.

But its tentacles were twisted about the deck in such a manner, that the Hardshell was yet held a complete prisoner.

Here was a predicament.

No amount of effort on the part of the machinery could free the pow-The Hardshell was a prisoner. How was she to be freed?

This was a problem which for a moment puzzled Frank Reade, Jr.

"the quickly found a solution.
"Put on your diving suits, Barney and Pomp!" he cried. "You'll have to go out and cut the creature away!"

The two jokers were only too ready to do this.

The pressure of the present depth Frank reckoned would not be sufficient to do them any harm.

They were quickly ready and going out upon deck with sharp axes

began work.

In a very short space of time they had freed the boat from its detaining encumbrance. Then they returned to the cabin.

The Hardshell again went on its way not much the worse for all its

hard experience.

"What is coming next?" cried the professor; "upon my word would be surprised at nothing!"

But for several hours the boat kept on its way unmolested.

Great schools of fish were met but these generally kept out of the

They were now very rapidly lessening the distance to the surface. Frank saw by the gauge that they were less than three miles from daylight.

The professor had wondered what was coming next. He had not long to wonder.

Barney had turned for a moment from the keyboard to oil a bit of the machinery.

So far as he had been able to see the course ahead was perfectly clear; but suddenly a great dark object loomed up dead ahead.

Frank saw it first,
"Hi!" he yelled, as he sprang for the pilot-house; "look out, Barney! There's danger ahead!"

Just too late the Celt saw it.

He placed his hand upon the rudder lever, but at that moment there came a terrific crash.

Things seemed going all to pieces. Every timber and plate of steel in the composition of the Hardshell cracked and strained.

It seemed as if the boat was certain to go to pieces.

Frank expected to hear the invading rush of waters and to know that death was at hand. But a miracle saved them all.

The truth was, that a high peak of a deep sea mountain had risen directly in the boat's path.

The Hardshell had run into this and wedged her bow tightly in between several layers of rock and earth. This held her fast.

And there she stuck with her machinery buzzing, and the electric

lights flickering madly.

Frank's first move was to shut off the machinery and let the boat lay easy.

Then he proceeded to as speedily as possible take note of her po-

sition; it was not an encouraging one. Whether the Hardshell could ever be extricated from her position or

not was a lively question.

Certainly she was badly stuck; as far as could be seen she was

Wedged most immovably. "I doan' see but dat we is dead stuck,

"Golly!" cried Pomp. Marse Frank."

"It looks like it," agreed the young inventor.
"Is there not power enough in the propeller to pull her off?" asked the professor. "I think not," replied Frank; "perhaps we can dislodge her with

an explosion, however."
"Of dynamite?"
"Yes!"

"Will that not be risky?"

"Not any more so than to remain stuck here forever!"

The professor was prone to admit the logic of this conclusion. But he very sagely said:

"First I think we had better examine her hull forward, and see if pulling her off the rocks would make her leak or send us to the bot-

"A good idea," agreed Frank. "We will proceed to make that examination.

But as far as could be learned the steel shell was unpunctured. It was yet capable of much resistance.

Frank speedily outlined a plan of action. He donned a diving suit and so did Barney.

Then these two proceeded along the deck to the bow, and more

Then these two proceeded along the deck to the bow, and more closely examined the boat's position.

This satisfied Frank that she could be dislodged with a dynamite cartridge, carefully placed in the ledge.

The submarine peak extended upward above this point for a dis-

tance of full fifty feet.

There were heavy crags of rocks above, which it was necessary that care should be used not to dislodge else they might fall and crush the bost.

Frank reckoned carefully upon all this.

Then he went back to the cabin.

He selected a cartridge and took an electric wire along with him. The cartridge was carefully placed and once again he returned to the

There was an expression of anxiety upon his handsome face which did not escape the others.

"Will it be safe, Frank?" asked the scientist.
"It is a chance!" replied the young inventor.
"And you are going to take it?"
"I am."

" But-" Well?"

" Is there no other and safer way?"

" Positively none.

The professor said no more. Frank connected the wire with the dynamos. Then he stood ready to fire the cartridge.

One moment only did he hesitate. Then he pressed the button.

There was a muffled roar, a shock, and then the boat began to an-

swer her propeller.

A great cry of joy went up.
"We're out of it!" exclaimed the professor. "Hurrah! We're free once more."

But his last words died away in a wail. What followed in the next

few moments was thrilling and most disheartening.

There was a ponderous object rolled down the side of the peak. It struck the Hardshell and lodged across her bow pinning her fast. It was a mighty bowlder weighing tons.

CHAPTER XI.

OUT OF A BAD SCRAPE.

For a moment the submarine navigators were wholly at a loss to know what to do.

It was certainly an appalling realization that they were thus anchor-

ed, perhaps forever, at the bottom of the sea.

It was little short of a miracle that the boat had not been utterly crushed by the bowlder.

As it was, she was securely pinned in the crevice, and it would re-

As it was, see was securely pinned in the crevice, and it would require more than an ordinary effort to extricate her. Aghast at the situation, Frank and the professor exchanged glances. It looks bad," declared the young inventor. "You see there is no way to get under the rock with dynamite without blowing the boat to atoms."

"Is there no other way that it can be released?" groaned the pro-

I see no other way.'

"Then our fate is sealed!"

So indeed it seemed to the horror stricken navigators. It was cer-

After all their hazardous wanderings in the depths, their marvelous adventures and miraculous escapes, they were now to meet their fate in this comparative slight depth of sea. It was a terrible thought.

After a time Frank prepared to don his diving suit. This done he left the cabin and went out on deck.

He made his way forward to the bow, and proceeded to examine the position of the boat.

Carefully he studied the situation. But he saw the sheer impossibility of dislodging the rock with an explosion.

The submarine boat was not seriously injured. If the stone could be removed she would be able to safely go on her way. There seemed to Frank but one way of releasing the craft.

This was to quarry the stone in sections. It would be slow, laborious work, and not a little difficult under water. But yet it could be

At once he decided upon the plan. He returned to the cabin and imparted it to Professor Van Dent.

Quarry it!" exclaimed the professor. "Why the blast would be

just as dangerous as the dynamite-"No, no," replied Frank. "Id "No, no," replied Frank. "I do not mean to blast it. I mean to use splitting drills and remove the stone safely and in sections."
"But it will take a good while."

"That will depend upon the nature of the stone. If it works easy we can very rapidly dispose of it."

The professor pulled off his coat as if he was about to pitch hay.

"I'm with you!" he cried; "I worked at stone myself once and can handle a drill as well as any man. Let us get right at it!"

"But keep on your coat!" said Frank. "We are working under

water and not in sunlight remember."
"Right!" cried Van Dent with a laugh. "I seem to be a bit rated. But let's get at it. Have we drills and hammers?" "We have."

"What, did you foresee this thing?"

"Not exactly," replied Frank, "but I brought along a mining out-fit, not knowing what we might come across, and there are hammers and drills included in that."
"Good," cried Van Dent.
"Do you really mean it?"

" Put me to work at once."

The professor was serious. "I do," he said.

So Barney brought up the drills from the lower cabin. Every one was now enthusiastic and hopeful.

All donned diving suits, and then under Frank's lead left the boat, or rather the cabin.

Anchors were thrown out as a precaution, though the Hardshell seemed to be anchored securely enough.

Then work was begun.

Luckily the ledge was found to be soft and easily drilled and split off in great flakes.

some hours the navigators worked with hammer and drills and splitting wedges.

The result was that they had soon made a very appreciable impres-

sion upon the big stone.

Great sections of it were cut off and rolled aside. Gradually the

submarine boat was being liberated. The pressure on the helments was painful to the brain so that the workers with hammer and drill could not remain out an extended

length of time. But a brief respite in the cabin would soon restore normal circulation, and then with this respite the good work went on.

Rapidly now the big stone began to disappear.
Half of it had been removed when the party went on board to re-

tire for a night's sleep.
"Once we get out of this scrape," said Frank, "we will go to the surface and prepare for a return home."

"I am willing!" cried Van Dent.

"We cannot say that our trip has not been a success."
"It has been a complete triumph! It is one of the grandest achievements of modern times!"

"Jes' der same I'se glad fo' to git back to Readestown!" cried Pomp. "Kain't say I like dese big fish wot am apt to swaller a po' lone coon laik me any time."

"Begorra they'd have spasms of the stummick if they swallered ye," cried Barney. "Shure yez wud be a hard pill to digest, naygur."
"Huh! dey neber wud trouble yo' I'ish!" retorted the darky; "dat mug ob yo's wud gib 'em a pain in de jaw!"

"Bejabers, don't yez sass me, naygur!"

- "Yo' commenced it, I'ish!"
 "Yer another, I didn't!"
- "Don' yo' make me a liar!"

" Whurroo!"

The two jokers would have been at it then and there, tooth and nail, had it not been for the interposition of Frank.
"None of that, you rascals!" he cried; "this is a time for work not

for skylarking!"

Soon all were at work again; another day's toil and the big bowlder was entirely removed.

The submarine boat was free once more.

Frank very slowly and carefully extricated the craft. There was no little risk in this.

For the sides of the peak were found to be an aggregation of loose bowlders which the slightest shock might disintegrate and send crash-

ing down.

But the Hardshell safely escaped from the precarious position and once more was free to proceed.

The navigators returned to the cabin, the anchors were taken in and Frank went to the wheel.

The boat started ahead, but had not gone a hundred yards before another deep sea peak loomed up.

This was avoided to meet another. Indeed there seemed to be a mighty range of submarine mountains in the vicinity.

Frank looked at the depression gauge and saw that they were nearly five miles from the surface.

He concluded that it would be safer a mile nearer the surface and accordingly sent the boat up.

When three and a half miles from the surface the journey was again

But the ocean now began to grow shallow very rapidly. In less than an hour it decreased from three and one-half to two miles.

Then it fell to one mile and then to half a mile. The bed of the sea had undergone a vast change.

Great beds of kelp and marine plants, such as were lacking in the

lower depths, were here visible.

Schools of fish of many varieties swam about. It was evident to Frank that they were nearing the shoals of the Aleutian Archipelago.

Every minute now the water grew more shoal. Before another day they had reached the shallow depth of six hundred feet.

Then Frank touched the tank valve, the pneumatic pump threw the water entirely out of the reservoir, and the submarine boat after two months of cruising in lower depths of the ocean sprung into the light of day.

The daylight for a few moments made all totally blind.

To be sure they had not come from darkness, but the glare of the electric light was very much different. It was this transition which blinded them.

But they were soon able to look about them, and then the scene which they beheld was one not altogether unexpected.

To the south, to the east and west was the bounding sea, but to the north there rose from the chilly waters the rugged shores of a number of islands.

"The Aleutians!" exclaimed Van Dent.

"First let us take our bearings and see," said Frank. "We may be in some other part of the world."

So the young inventor proceeded to take the bearings. As the sun was at the right angle this was not difficult. In a few moments he was able to announce:

"We are directly on the line of the Aleutian Archipelago."
"Hurrah!" cried Prof. Van Dent. "We have successfully reached the end of our voyage."
"At least we have accomplished our undertaking," modified Frank.

"You know we have the return voyage to make."

Barney and Pomp were jubilant. They were anxious to go ashore

upon the islands at once.

"Begorra, I'd loike another fishing thrip wid Misther Van Dent," he declared.

All laughed at this.
"Well, we will visit the islands for diversion!" said Frank, "if we can find a suitable harbor!"

So the submarine boat coasted about the little archipelago looking for a good harbor.

But unfortunately such was not to be found.

The shores were all in the breaker line and without a break large enough to admit the safe entry of the Hardshell.

However, Frank sailed into a little strait between two of them,

where the water was comparatively smooth.
"We will anchor here!" he said. "I believe the boat will be as safe here as in a harbor."

So Barney and Pomp sprung to the anchor cables and soon the Hardshell was made fast

CHAPTER XII.

THE U. S. CUTTEH-WHICH IS THE END.

PREPARATIONS were now made to go ashore. That the islands were

habited hardly seemed likely.

At least nothing was seen of inhabitants or of any dwellings.

"There are a number of the smaller atolls which fringe the Aleutian group," concluded Frank. "I doubt if they are ever visited."

"Save possibly by seal hunters," agreed Van Dent.

"There are none of those visible at present."

" No."

The canoes were now brought out and the adventurers prepared to

They took arms as well as fishing tackle with them. Frank had decided to take a shot at some of the birds which made their homes in the cliffs.

Soon the little party reached the sandy beach. The canoes were drawn high up and then they strolled along the shore for a ways.

These were rugged and bleak. The verdure which was visible be-

yond the cliffs was intensely green, probably in contrast.

The sea looked cold and cheerless. In fact, there was an Arctic air

about everything.

Frank remarked this, and Van Dent hastened to say:

"I think I can explain that. We are upon the edge of the group nearest the North American coast. If we were further west, we would get a warmer air from the Asiatic currents!"

"I hardly think I would care to make a life residence in this part of the world!" said Frank.

"No, I think not," agreed the professor. "Yet some of these isles are well settled.

Barney at this moment took a shot at some ducks. Pomp at once followed his example.

There was plenty of this sort of shooting, and soon the sportsmen

had filled their bag.

Then the professor said:
"Let's take a little trip into the interior."

Everybody was ready for this. But at this moment Frank espied an object on the cliff.

"What is that?" he cried, "is it not evidence of a settlement?"

There was a little mound upon the verge of the cliff and above it was a battered wooden cross made of the splinters of a ship's spar.

The explorers at once made their way to it. Upon the slab there were rude letters cut with a knife. Van Dent deciphered them as follows:

"Here lies the body of Captain James Houghton of the ship Hopeful, whaler from Vancouver. Died in the fortieth year of his age, and buried here by his shipmates. Requiescat in Pace."

"Poor chap!" soliloquized Frank, " he is buried in a lonely part of the world."

"Indeed that is true!" agreed the professor, "but what does it

matter after a man is dead. Doubtless it was his own request."

"Oh, yes, of course it was preferable to being buried at sea and becoming food for the fishes."

Barney and Pomp had wandered to a higher part of the cliff. Sud-

denly the Celt gave a loud cry.
"Begorra, Misther Frank! wud yez luk at the Hardshell!"

Startled by this exclamation, Frank sprung to a point where he had a view of the submarine boat. .

The others as well saw what was to them a startling sight.

The water about the Hardshell was all a foam and deeply agitated.

The boat was half upon her side.

In the strait were a couple of huge sperm whales. They had evidently recognized the submarine boat as a rival monster and were going in for a general knockout.

Several times they had dashed against the boat. Of course the Hardshell did not sink, but she listed badly and Frank knew that some serious harm must have been done.

So he cried: "Mercy on us! They will wreck her, we must get back there as quickly as possible!"

Back along the shore ail ran now post haste.

It was but a moment's work to get into the canoes and put off for the Hardshell.

But now a new peril arose. When two-thirds of the way to the sub-marine boat, one of the whales seemed io espy one of the canoes.

It was the one in which Frank and Pomp were seated. The whale started for it full tilt:

For a moment it was an outlook of awful peril. Frank knew that the monster's jaws or flukes could crush the canoe like an eggshell.

What would then be their position?

He sprang up in the canoe and cried to Pomp:
"Yeer to port with your paddle, Pomp! We must dodge him if we

"A'right, sah," replied the darky.

The next moment the whale was npon them. What followed was ever after like a confused dream.

The canoe was crushed. Both occupants were in the water, which

was icy cold.

Fortunately, however, both were good swimmers, and struck out for the boat.

The whale had turned and seemed about to go back for them. But instead it went down. Barney and the professor meanwhile had reached the deck of the

Hardshell, which was slanted at a dangerous angle.

Seeing the peril of their companions, they hastened to throw a line which both grabbed. It was but a few moments' work to draw them

dripping on board.
"Up anchor, quick!" cried Frank. "If we get another blow on this

side, we shall surely go over."

Barney and Pomp sprung quickly to obey.

But just as the anchors came up, there was a terrific shock, and the Hardshell seemed fairly hurled upward out of the water.

A great wave swept over her deck when she came down. The truth was that the whale which had dived a few moments before, had come up right under the keel.

Only a miracle prevented her being completely capsized; Frank sprang into the pilot-house.

He saw that their only salvation consisted in getting away from these pugnacious whales as quickly as possible.

He had no desire to remain and combat them. He decided to seek

safety in flight.

So the Hardshell was sent flying out of the strait. In a few mo-

ments it was safe from the deadly antagonists.
"Well, I never," gasped the professor. "I didn't believe those whales could give us such a tussle!"

"Indeed we are lucky to have escaped," said Frank.
"Why should they make the Hardshell a special subject of attack?" "Probably because it bears in shape and size somewhat of a resemblance to one of their kind."

"Ah, very likely that is it. Have they done us any harm?
"The boat lists as though she had shifted her ballast." down and ascertain presently. Certainly they could not crush her hull. What I feared was derangement of the machinery. Hello, what is this?"

All gave a startled crv.

Around a headland there suddenly swung a neat little steamer which

bore the American flag and carried a small battery.

She was a government cutter and at sight of the Hardshell fired a salute.

Frank waved a flag in reply and the cutter drew nearer; soon the hail came across the water.

"Ahoy, what craft is that?"

"The Hardshell, submarine boat," replied Frank. "We have been exploring the deep sea in these latitudes."
"Is that the craft owned by Frank Reade, Jr?"

" Yes."

"We have heard of you. Come alongside, as we have dispatches, and when we left San Francisco a month ago were requested to keep a lookout for you."

"Which is very kind," replied Frank. "We will do so."

Then he turned to Barney.

Then he turned to Barney.
"Run alongside the cutter, Barney!" he commanded.
But the Celt stepped out of the pilot-house and his face was deadly

pale.
"Shure, sor, I can't," he replied, "the machinery won't work an'
— Wud yez listen to that?"

The boat

A strange gurgling sound came from the forward hold. The boat vibrated strangely. For a moment mortal torror seized all.

Without a word Frank sprung into the forward cabin. He lifted a trap and looked down into the hold.

He saw water there.

"She is leaking!" he gasped, "this is the last voyage of the Hard-

Prof. Van Dent was at his shoulder, and exclaimed: "My soul! You don't mean that, Frank?"

" I do!"

"What has caused it?"

"Probably the shock of the explosion when we were stuck in the submarine mountain loosened the plates. The attack of the whales loosened the rivets and sprung a seam."

But cannot it be closed?"

"Only by hauling her out into a dry dock."

"And that cannot be done."
"No."

"Then the boat must sink!" gasped the professor. "Yes."

"My soul! what shall we do?"

"Pick up every valuable that you can carry and signal the cutter to take us aboard. It is our only hope."

Frank rushed back to the deck. He again hailed the cutter.

"Ahoy!" he shouted. "Send us a boat just as quick as you can. We have sprung a leak."

Instantly there was commotion aboard the Bear, which was the Cutter's name.

A boat put out at once and in a few minutes was alongside.

A uniformed officer sprang on to the deck and saluted.

"I am Lieut. Cooper," he said. "Is your craft sinking?"

"She is," replied Frank. "We shall have to appeal to you."

"Certainly; we are on our way to San Francisco now. She seems to be settling quite fast."

"She will go to the hottom in treatment."

"She will go to the bottom in twenty minutes!" said Frank.
"She has been there before!"

"Yes, but this time we lack the means of raising her."

"It is too bad to lose so fine a boat. Can she not be raised? How deep is the water here?"

"About six hundred feet. No, it would never pay to raise her."

"Then you must stand the loss."

"Then you must stand the loss."

"That is the long and short of it."

But the lieutenant knew full well that Frank was able to do this.

Moreover, the Hardshell was partially insured.

Lieutenant Cooper did all in his power to aid the navigators.

Such valuable matter as it was deemed best to save was quickly

transferred to the boat.

The Hardsheil settled rapidly.

Her lee rail was now washed by the waves. The lieutenant exclaimed apprehensively:

"Mr. Reade, I think we are incurring some risk in remaining longer!"
"You are right," agreed Frank. "We are ready now. Let her

go by the rail.

Barney and Pomp got in the bow of the cutters' boat, Frank and the professor with Lieutenant Cooper in the stern.

Then the boat cast off and was soon yards away.

All eyes were upon the Hardshell.

She settled with a sudden lurch, her bows sprung slightly upward, there was a white pool of water and she shot out of sight.

In a few moments the water had ceased churning. Only a few bits of driftwood marked the spot.

The great submarine cruise had reached its end.

The U.S. cutter Bear reached San Francisco in safety with the rescued passengers of the Hardshell.

Something of a sensation was created when it became known who they were.

The telegraph wires sent the news broadcast over the country. Great crowds gathered to see the plucky navigators board the eastern bound train.

A private car was placed at their disposal, and in due time reached New York.

Here a genuine ovation was accorded the distinguished travelers. But they were all anxious to get home and rest after their arduous

trip. Prof. Van Dent returned to Washington. He was the lion of the

hour in scientific circles.

Frank Reade, Jr., with Barney and Pomp, went back to Reades-

And there they are happily residing to-day, and will doubtless continue to reside until the inspiration moves Frank Reade, Jr., to once more start forth upon an adventurous trip.

Until such time let us bid them all adieu.

[THE END.]

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